

REMARKS

Status of the Application

Claims 1-15 are pending in the application. Claims 7 and 14 have been amended. New Claims 15-16 have been added. Applicants respectfully request reconsideration of the claims in view of the foregoing amendments and following remarks. Each of the Examiner's rejections is addressed below

Corrections to the Specification and Claims

Applicants have amended the specification to correct an erroneous references to the second sheet in Fig. 2. Applicants have also amended Claims 7 and 14 to correct an antecedent basis issue.

Rejection under U.S.C. § 103

Claims 1-6 and 9-13 stand rejected under 35 U.S.C. § 103(a) over Carlstrom in view of Franklin, Baker, and Anderson. This rejection is respectfully traversed. Applicants assert that none of the cited references disclose or suggest the feature of the first internal fuel manifolds and second internal fuel manifolds being of unitary construction with the first and second plates.

On page 3, the Office Action states that Carlstrom fails to teach internal fuel manifolds, either a single one or a plurality of manifolds. The Office Action then relies on Franklin for the teaching of manifolds. Then, regarding unitary construction, the Office Action states:

The conversion of the internal channels of Carlstrom using manifolds as taught by Franklin et al. would result in a unitary construction since the internal channels of Carlstrom are unitary to the bipolar plate.

Applicants assert that this statement is not evidence that the modification of Carlstrom in the manner suggested by Franklin results in the claimed structure. What are the internal channels converted into? If they are converted into manifolds, then they no longer are internal channels.

There is no teaching or suggestion in either of the cited references for the manifolds being of unitary construction with the plate. As previously noted, Carlstrom fails to teach manifolds at all. In Franklin, the manifold is a separate unit that must be attached to the plate. See Franklin paragraphs 82-89, where Franklin discusses in detail several adhesives and/or gaskets that may be used to attach the manifold 81 to a plate. However, Franklin makes no disclosure or suggestion for making the manifold unitary with one or more plates. Franklin instead teaches a separate manifold for simplified assembly of a fuel cell. See the end of the Franklin Abstract. Applicants simply do not see how a teaching of a separate manifold for simplified assembly of a fuel cell can result in the claimed structure where the manifolds are of unitary structure with the first and second plates. The Examiner's combination of References is factually deficient and does not teach all of the claimed structure.

Therefore, neither reference teaches or suggests any feature of a manifold in unitary construction a plate. None of the other cited references make up for this deficiency. Further, the Office Action provides no articulated reason with rational underpinnings to support a conclusion of obviousness. *KSR Int'l v. Teleflex Inc.*, 127 S. Ct. 1727 (2007). As far as Applicants can tell, the Office Action merely states that channels can be converted into manifolds, but this statement does not meet the requirements for a *prima facie* case of obviousness. See MPEP §2143. Applicants therefore request the Examiner to provides a complete articulation of all requirements to support a conclusion that the features of "a plurality of first internal fuel manifolds of unitary construction with the first and second plates and formed in the first edge area and in fluid

communication with the center flow channels,” and “a plurality of second internal fuel manifolds of unitary construction with the first and second plates and formed in the first edge area and in fluid communication with the anode flow channels,” are obvious, or withdraw this rejection.

Accordingly, Applicants assert that Claims 1 and 9 and all claims that depend upon them, are allowable.

On page 6, the Office Action states “With regard to claims 4 and 12, Carlstrom in view of Franklin et al. teach a separator plate that is bent over at the ends to support the seals (Franklin et al., [0083]).” Applicants assert that this is not what is claimed. Claims 4 and 12 recite “wherein a portion of the second end area is folded over onto itself, **and a spacer is positioned within the folded over portion.**” None of the cited references disclose this feature, and Applicants assert that Claims 4 and 12 are allowable separate from their dependence on allowable parent claims.

On page 6, the Office Action states “Regarding claim 5, Carlstrom in view of Franklin et al. teaches the multiple manifolds, or segments, that internally connect to the first and second sets of passages.” No section of Carlstrom or Franklin is cited to support this statement. Applicants assert that neither Carlstrom nor Franklin teach or suggest any features of segments, or wherein “each segment having a first internal fuel manifold and a second internal fuel manifold.” Applicants have previously noted that Carlstrom does not mention manifolds, and Franklin does not teach or suggest internal manifolds. None of the other cited references make up for this deficiency. Accordingly, Applicants assert that Claim 5 is allowable separate from its dependence on an allowable parent claim.

Claims 7, 8, 14 and 15 have been rejected under 35 U.S.C. § 103(a) over Carlstrom, Franklin, Baker, Anderson, and Jones. This rejection is respectfully traversed.

On page 7, the Office Action states "Jones teaches wires disposed between the bipolar plate and electrode to distribute reactants and products and to provide deformability and resiliency in the cell (column 2 lines 15-21)." Applicants disagree. Jones makes no disclosure of the wires being flat. At the cited section, Jones instead describes "a tridimensional network mattress with spiked surfaces, formed by metal-wire fibers." There is no disclosure of flat wires. None of the other cited references disclose or suggest this feature, and Applicants assert that Claims 7, 8, 14 and 15 are allowable separate from their dependence on allowable parent claims.

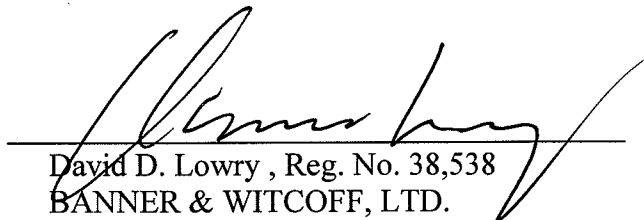
Applicants have added new Claims 16-17 which recite subject matter disclosed but not claimed. Support for these features may be found, *inter alia*, in Fig. 4 and the specification, page 6 lines 8-18. Applicants assert these new claims are allowable.

Conclusion

Reconsideration and allowance of all the pending claims is respectfully requested. If a telephone conversation with Applicants' attorney would expedite prosecution of the above-identified application, the Examiner is urged to call the undersigned at the number below. The Commissioner is hereby authorized to charge any additional fees or credit overpayment to Deposit Account No. 19-0733.

Respectfully submitted,

Date: 9/26/08

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